

CONSUMERS' *Guide*

VOLUME IV, NUMBER 10

AUGUST 9, 1937



MILK FOR MILLIONS

CONSUMERS'

Guide

Issued every two weeks by the Consumers' Counsel, Agricultural Adjustment Administration, Department of Agriculture, Washington, D. C.

VOL. IV, No. 10 AUGUST 9, 1937

CONSUMERS in Massachusetts have an alphabet all their own, compiled by the executive secretary of the Hampshire County Consumers' Institute. Other consumers elsewhere may want to try it out in their shopping and their study of consumer problems to see if it spells greater buying satisfaction. Following is the Massachusetts Consumers' Alphabet:

A Are you aware of what consumer problems are? Ask for information about what you buy.

B Beware of bunkum in advertising. Bargains are not always a best buy. Begin your consumer education by reading consumer literature available through your Consumers' Institutes.

C Consumer cooperatives and credit unions are consumer creations which concern you. Other countries are already using them.

D Drugs, foods, and cosmetics need further Government regulation for your protection. Do you know about Food and Drug legislation?

E Enlist with the Consumers. Educate yourself. Don't be an easy mark. Unless consumers organize and work together to make their rights respected, they deserve just what they get.

F Find out about funeral costs before you die, if you would protect your family. Failure to do so may result in having your insurance fatten the receipts of the undertaker rather than furnish food and education for your dependents.

G Government grades are a safer guide to buying than glamorous ads. Know the grades of vegetables, meat, and canned goods.

H Help the consumers in your city.

Join one of the Consumers' Institutes of Massachusetts. There are no dues, no assessments; the Institutes are nonpartisan, noncommercial, and nonpolitical; and the monthly meetings are worth while.

I Investigate installment buying, before, not after, you sign on the dotted line; you may be assigning your wages. Fine print is often most important.

J Jot down prices and shop around for everything from groceries to clothing. Don't jump at conclusions about merchandise. Learn to judge values.

K Know your fabrics. Your Consumers' Institute will furnish you with information.

L Live simply and leave luxuries alone if you would balance your budget in 1937. Listen to the various Consumer Broadcasts over the radio. You will learn a lot and live better for less.

M Milk is still one of the best and cheapest foods for the family, especially in hot weather. Meats are high but still necessary, and the left-overs must be utilized with care.

N Never throw away anything. If you cannot use it yourself, give it to someone else who can.

O Open your ears, your eyes, and your mind to consumer questions, so that you may buy wisely and "owe no man anything."

P Price is important to the prudent. Pick your purchases prudently if you prize your pennies.

Q Question the merchants where you buy. They are always glad to help you if you ask them. Quality is even more important than price.

R Remember to read the labels for real information. Rayon fabrics are legion. Do you know the vari-

ous types and how each should be washed or cleaned?

S Save something every Saturday, if it is only a nickel. Sums are better than subtractions. Shop around for everything.

T Tell your friends about the consumer work. Talk about it at your club meetings and sewing meetings, even at your missionary meetings, for it is real missionary work. Thrift will make you thankful when you have to pay your taxes.

U Utilities of all kinds are under attack. Should these be managed for the use of the consumer or for the profit of a few? Or is there a middle ground?

V Vegetables vary. Vigorous insistence on value is vital, if you would provide the family with vitamins.

W Welcome all the consumer information you can get. It will work wonders. Wills should be made by everyone—women as well as men.

XYZ You may yet expect to balance that budget, if you cut out the extras, yearn not for what you cannot afford, and are zealous in saving the pennies, left-overs, and yourself. And, lastly,

ETC. May you learn more of consumer questions than just the alphabet.

WANTED: An outline of your consumer course! Is your home demonstration club, your cooperative, your consumer club staging any formal study of buying problems? Are you a teacher of courses in home economics, general economics, commercial economics, which include discussion of how low-income consumers can make their expenditures count in better buying? The Consumers' Counsel Division is making a collection of outlines of consumer courses. We would appreciate your sending us a copy of your course outline together with a brief story of your consumer education work.

CHAMPION among foods, milk does more for good nutrition than does any other single food. . . . Champion among farm products, milk supplies American farmers with one-fifth of their farm income.

IF EVERYBODY could afford an adequate diet at moderate cost and parceled out his food money in the best way, each of us would get about 305 quarts of milk or its equivalent each year. . . . What we are getting is about 194 quarts a person a year—an average which means that many are getting less.

HOW to step up milk consumption to good nutrition levels is one of the most baffling food problems. . . . To produce enough milk, farmers must be paid a price that makes adequate production for everyone continuously possible. . . . To be able to consume more milk, consumers must have larger incomes or prices must be lowered. . . . Is it possible to achieve both under our present method of distributing milk?

WE TAKE our readers, in this article, on the first lap of an exploratory tour of the many tangled problems involved in milk production, distribution, and consumption. Other stages of the tour will come in later issues.

MANY of the facts in this series come from the Federal Trade Commission's inquiry into agricultural commodities. Where they appear they are so credited. Earlier articles based on this inquiry have appeared in our issues of May 17 (general review), June 14 (tobacco), July 12 (potatoes).



MILK FOR MILLIONS

TWENTY-FOUR and a half million cows go out to pasture in America. They munch grass, chew their cuds, and in their contented bovine way they quietly set about the manufacture of milk.

No one involved in the problem of milk except the cow is contented. Consumers complain that they do not get enough milk at low enough prices. Producers say that that may be so, but from their end it seems that they frequently produce too much milk and more often get too little for producing it. Distributors caught between the farmers and the consumers say yes and no, and most of the time say nothing at all.

Here today and gone tomorrow might just as well have been said about milk, for milk is the most short-lived of commodities. The milk we drink is hardly ever more than 48 hours old. The life span of a glass of milk is short indeed, and it is this fact that makes the milk industry unlike any other industry. Denying the necessity for such haste,

however, some point to a recent shipment of milk from Portland, Oreg., to Manila, a 26-day journey. Reported consumers from Manila, "The milk was fine."

But the supposed perishability of milk has geared the source of supply close to the point of consumption. Our vegetables may come from California or Florida; our wheat may come from almost anywhere in the world; our coffee, our cocoa, and our spices come from the ends of the earth, but our milk comes from our community backyard, the milkshed, whether it must come from there or not. In Baltimore, a city ordinance requires that it come from a distance no greater than 50 miles. All except one percent of Milwaukee's milk comes from within 40 miles. Seventy percent of all the milk shipped into St. Louis comes from within a radius of 50 miles.

Milk in its natural state, if it is to be handled at all, must be handled at once. Cows observe no holidays, are as yet unaffected by the demand



Safe milk is good health insurance, but sanitary regulations may affect more than the safety of milk consumers drink.

for a 5-day week. To receive the cows' output, dairy farmers must work every day; trucks and trains must move continuously with their cargoes of milk; fluid-milk plants, creameries, evaporators, cheese factories, every milk-processing plant must be geared for quick action.

Rivers of milk, like the rivers that run through America, would cause no problem if they flowed smoothly, but like other rivers, the milk river has its flood problem and its drought problem. One-half of the Nation's milk is produced during one-third of the year. In the spring when most cows freshen, when pastures are green, production of milk doubles and sometimes trebles in a few weeks. A torrent of milk flows into milk-processing plants. In the fall and winter the stream of milk runs low. Unlike grains and other commodities, milk cannot be stored for long in its natural state. The use of milk must be adjusted to meet these seasonal changes in supply.

Flood control of milk is effected by

the diversion of milk into byproducts during the flood tide, by lessened manufacture of milk products during the ebb tide. Flood milk—milk in excess of the demand for fluid—is generally called "surplus" milk. Paradoxically the supply of "surplus" milk exceeds the amount of milk that goes into fluid uses. In 1934, of every 100 pounds of milk produced, 41 pounds were used in fluid form; 44 pounds were spread on bread or used in cooking as butter; 6 pounds were eaten as cheese grated on spaghetti or sliced in sandwiches; 3 pounds were spooned into consumers' mouths in the form of ice cream; 4 pounds were poured out of cans in the form of evaporated or condensed milk; the remainder went into that almost forgotten animal, the calf, or was used in the form of miscellaneous milk products, such as malted milk, powdered milk, and so on.

Dairying is one of the oldest of professions. The keeping of animals for milk extends back into history

beyond the knowledge even of archeologists. Yet today the production of milk is not so different but that some prehistoric herdsman could not soon feel at home on a modern dairy farm. Chief changes have come about through the effort to make cows more productive and the milk less perishable and more healthful.

Streamlining cows for milk production is not so simple as streamlining trains for speed. But some idea of how successfully the latest model cow has been streamlined may be gathered from the fact that though nature originally provided the cow with only enough milk to take care of a calf, today many cows provide enough milk to take care of 10 calves. Highly bred dairy cows are such perfect milk-producing machines that practically all the food they can consume and digest is used to make milk. As a consequence such cows are spare, angular animals with little unnecessary flesh on them. The nutrients necessary for flesh-making go into milk-making. Special breeds of cows, too, produce milk with either high or low butterfat content. Holstein Friesians, for instance, produce large quantities of milk that is not rich in butterfat. Guernseys and Jerseys, on the other hand, while they do not produce so much milk, produce milk that contains as much as 5 or 6 percent butterfat. The average American cow in 1935 produced 4,169 pounds of milk a year. For 1924 this average was 3,784 pounds of milk.

Drink milk for health, the slogan runs, but milk has not always been the most healthful drink available. Before the days of milk inspection a study of 240 epidemics in Massachusetts revealed that 19.2 percent, or 46 epidemics, were due to milk infection. Typhoid fever, diphtheria, scarlet fever, septic sore throat, tuberculosis—all of these dread diseases at one time were the

August 9, 1937

hazards incurred in a glass of un-inspected milk.

Scientifically safe milk had to wait upon the development of scientific knowledge. First milk laws, not surprisingly, were concerned with the adulteration of milk rather than with impure milk. First milk regulation on record was passed in Glasgow, Scotland, in 1809. This law prohibited the dilution of milk with water. First English law was passed in 1860, also prohibiting the watering of milk.

Earliest attempts at milk control in the United States occurred in Massachusetts. In 1856 a State law was passed prohibiting the adulteration of milk. In 1859 a Boston milk inspector was appointed. In the same year a law was passed making illegal the use of distillery slops for dairy feed. Until 1900 most milk inspection laws were devoted solely to the detection of watered, skimmed, and adulterated milk.

Montclair, N. J., in 1900 initiated the bacterial examination of milk. The inspection of milk as we know it today, on the farm, on the way to the city, and finally in the processing plant in the city, did not become general until about 1910.

Dairy inspection received its impetus from the efforts of two doctors in Montclair, N. J., in 1889. These men made a study of sanitary milk production, and then having satisfied themselves that milk could be produced under conditions that were perfectly healthful, they looked for a farmer who would agree to produce milk under their supervision in accordance with their instructions. This milk was called "certified milk." The name "certified milk" was registered with the United States Patent Office and the right to use the name was granted only to dairies which followed certified milk practices. Today medical milk commissions in some States and State Departments

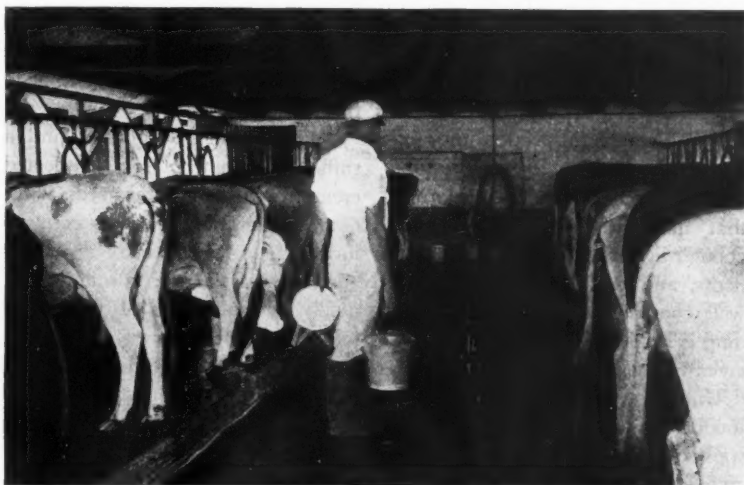
of Health in other States supervise the production of certified milk. Certified milk is now the highest quality raw milk that is obtainable. The most important effect of this work, however, was the establishment of the fact that it is not impossible to have hygienic dairies, and from this original demonstration by two New Jersey doctors our present complex system of dairy inspection has grown up. Apart from its historical interest, however, certified raw milk

is relatively unimportant on the market. Most consumers find it too expensive, and use, instead, pasteurized milk. But where pasteurized milk is unavailable smart consumers take no chances with milk; they boil it before they use it.

Public demand for pure milk has resulted in many milk laws. Safe milk is good health insurance. Milk ordinance objectives should be simple, should seek only to obtain good clean milk for the consumer. To



Cleanliness must start at the farm, if milk is to be safe, with clean cows, clean barns, clean milkers, clean pails, and clean anything that comes even indirectly in contact with the milk—as here on this A-1 dairy farm.





Heat multiplies unhealthy bacteria so milk must be kept cool from the moment it is drawn from the cow. This farmer runs water around his milk-filled cans until time to start the milk on its journey to town.

achieve this, milk ordinances should require sanitary dairy practices and define practicable standards of purity. They should set up minimum butterfat requirements, and minimum solids-not-fat requirements for all milk, irrespective of grade. Grade standards of a milk ordinance should be standards of purity, not richness. They should prescribe proper conditions of production, of transportation, of pasteurization, and of delivery.

Ideally, inspection under adequate ordinances should start with the cow. Dairy inspectors who score dairies by means of a model score card prepared by the United States Department of Agriculture, first examine cows to see if they are clean and in good health, find out if they have been tested for tuberculosis, determine whether or not their food and water are clean and wholesome. In stable inspection, they examine the drainage, look for possible sources of contamination, see to it that the cows are provided with enough light and air, that the walls, floors, and roofs of the stables are well constructed. The cows' bedding is inspected, and extra credit is given for heating systems.

Under perfect conditions inspectors demand that milking utensils be washed frequently and kept spotless. give extra credit for milk coolers.

Clothes and health of the attendants should be noted. Other safeguards are washing the cow before milking, removal of manure from the stables, and the use of tested cooling and transportation practices.

Many communities are still unprotected by any milk ordinance or inspection. Many are still handicapped by poorly drawn ordinances, inadequately staffed inspection offices. When consumers are apathetic, farmers resistant, or city health authorities not careful enough, safe milk standards slip. The United States Public Health Service reports every year from 30 to 50 outbreaks of milk-borne disease. These are always the result of inadequate milk sanitation. There is no sound reason why practically all of them may not be prevented.

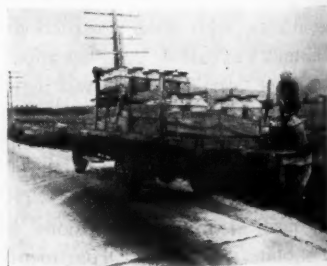
Milk ordinances can make problems as well as solve them, when they go beyond their primary function of assuring a sufficient supply of safe milk. Then they act as tariff walls barring out shipments of safe milk which might relieve consumers from high prices or shortage in supply. This, it seems, they may do in two ways: By permitting the local market to consume as fluid milk only milk produced in the nearby milkshed, and again by limiting the number of farms within the milkshed which local authorities will inspect and certify for shipment of milk to their city.

"When health authorities find a sufficient volume of local inspected cream to meet the local needs, without consideration as to its cost, no inspection or permits are given for admission of the more distant product." A committee of the International Association of Dairy and Milk Inspectors was discussing the effect of health regulations on the economics of milk when it made this statement in its report to the association in 1933. "Many health officials

in the East", it said, "have been somewhat embarrassed during the present economic condition in having to restrict interstate shipments of milk and cream by using health regulations in what everyone knows is an unlawful and unjust procedure."

The Deputy State Health Commissioner of New York told the convention some of the conclusions arrived at by a committee of his State which had studied the safe-milk requirements of different cities. Several of his comments reveal the intimate tie between health regulation and market control. "I might say here that the committee did not attempt to classify certain requirements which have acquired considerable vogue of late, such as those limiting the local production areas and requiring pasteurization to be done within the municipal limits. The intent of these is so obvious that we thought it better to maintain, for the time, a 'hands off' attitude." He told how conflicting interests of large and small distributing agencies may give rise to conflicting local ordinances which interfere with the free flow of milk. Health officers, he says, usually defend these regulations designed to limit the field to local industry, with the argument that they can maintain close supervision only over local sources with the funds at their disposal. "At times", the Commissioner said, "there have been in-

Even transporting milk has become a complicated business with its own points of friction, its own technical problems, its own achievements.



mations that health officers had had little to say about the enactment of these regulations or ordinances and that they had been instigated by the local producers and dealers."

"It is evident", warns the first committee quoted above, "that more laws and barriers will be made to restrict the free flow of interstate commerce unless some effort is made in a broad way to standardize the methods of inspection." A question to consumers is posed by this committee: "Since Federal control of shipments of meat has proven satisfactory for more than a score of years, is it not feasible to consider milk and cream under a somewhat similar plan?"

No direct recommendations come from the Federal Trade Commission on whether or not the present system of local sanitary control should be stripped of its power to control supply (and therefore price) of milk. The Commission recommends more, not less, local control of supply, but by farmers through inter-marketing-area agencies representing local co-operatives "... with a view to more effectively controlling the transfer of milk and cream from one producing area to another. . . ." But the Commission also favors the standardization of sanitary regulations by proposing that a Federal authority should be directed "... to prepare and recommend for adop-

tion by the several States, uniform laws relating to . . . sanitary regulations, inspection rules, and other matters"—a program which, if put into effect, might go far to strip local sanitary control of its power to influence the price consumers pay for fluid milk and cream.

Such a standard milk ordinance which embodies all necessary health requirements has been drafted by the United States Public Health Service and is in operation in 676 cities. Each year the provisions of this ordinance are checked with State health authorities, the dairy industry, and experts in the Department of Agriculture, to conform with the latest scientific findings in the field of milk control and the best administrative practices. We described this ordinance in the CONSUMERS' GUIDE of February 22, 1937.

Our grandmothers perhaps remember Mr. Jones who owned several cows and a farm on the outskirts of town. Grandmother left a jar with 4 pennies in it at her gate every morning and Mr. Jones came along during the morning with a horse and wagon and a can of milk. He took the 4 pennies from the jar and then filled it up to overflowing with milk from the can. Later on grandmother remembers that Mr. Jones sold his nearby farm and moved farther out into the country. Then her milkman, Mr. Brown,

came around each day with a horse and wagon loaded down with many cans of milk. Grandmother went down to the gate with a pitcher and Mr. Brown filled the pitcher up for her. The difference between him and Mr. Jones was that Mr. Brown did not own the cows from which his supply of milk came. He bought the milk from Mr. Jones.

Mr. Jones' successor was the ancestor of the modern milk distributor. Mr. Jones himself has been pushed far out into the country, the town has become a city, and the city is sharply and abruptly different from the country. To bridge the gap between farm and city is too large a job for a horse and wagon. Just as the simple candle has given way to dynamos, transmission systems, and electric lights, so the homely can of milk and the neighborly Mr. Jones have given way before modern dairy farms, elaborate transportation systems, scientific bottling plants, complex distributing systems, and intricate economic relationships.

There are 605,000 Mr. Joneses operating dairy farms today. Besides there are 4,000,000 other farms that keep cows for milk. There are approximately four cows to each farm in America today, some with more, others with fewer cows. On full-time dairy farms there are approximately 12 cows each. The milk industry has grown from a neighborly service to the largest farm industry, with a cash return to farmers in 1936 of 1 billion 300 million dollars.

Three fluid milk economies exist side by side in America today. The first, the simplest, is the economy in which the farmer and his family and his livestock consume all the milk produced on their own farm. The second, which our grandmothers remember, and which still exists in

[Continued on page 18]

From the farm to country receiving stations or city pasteurizing plants, by train or by truck, whatever the cost it comes out of the farmer's pay check.

Motor trucks now do more milk hauling than trains to many cities, but not many are equipped as is this glass-lined model to keep milk cool and uncontaminated.



LINEN CONSUMERS ARE LUCKY

COLONIAL dames valued a fine linen damask cloth, a snowy linen kerchief for their neck, a dress of homespun linen, not only for its use and beauty, but for the many tedious hours of labor that went into making it. Often the flax had been grown in their own fields. Every member of the family had helped to harvest it, thresh it, to ret it, and scutch it, so that the long fibers which part so reluctantly from the flax straw might be used by the mistress of the household for her long winter spinning chore. After the spinning of the fiber into stout yarns, there was still the weaving into cloth. Small wonder dresses and shirts were turned and returned in those days. Materials from Europe were expensive, boats were few and far between. Clothes to wear, as well as food to eat, had to be produced at home.

Today the spinning wheel to twist a fine linen yarn adds a bit of color to the early American living room or gathers dust in the attic. Fields of flax on New England and Southern farms have given way to fields of grain and cotton. Our utility clothes—dungarees and overalls—are made of machine-made cotton materials.

Machinery absorbing many hours of hand labor has made cotton the king of our fiber crops. Since the invention of the cotton gin in 1793 flax-fiber production in this country has been steadily losing ground. The many processes involved in readying flax fiber for spinning into yarn are still largely done by hand. Only 250 to 450 tons of the 4,000 to 8,000 tons of flax fiber used annually by United

Aristocrat among fabrics, linen comes high because cultivation of flax and weaving of cloth make exacting requirements. Tips to consumers with big enough budgets tell how to spot quality and insure long life to linens

States flax-spinning mills are produced in this country. The rest we import from Belgium, Russia, and the Baltic countries where workers are highly skilled in the culture of flax, and where the cost of their labor is cheap. Flax fiber is used not only for making fabrics but for the manufacturing of papers. The United States uses annually 6,600 tons of flax fiber in the form of cigarette paper alone. About three-fourths of this paper is made in Europe. For the past few years American cigarette-paper companies have been fostering flax-fiber growers in this country.

Only a small percentage of the average 2¾ million acres yearly sown with flax in the United States is cultivated for flax fiber for yarns. Most of it is raised for seed, which is a valuable product in the manufacturing of oils for varnishes and paints. A portion of the flax fiber we do raise is used for upholstery tow—stuffing for furniture, automobile, and Pullman seats.

Flax will grow well in many different climates, but the cultivation of flax for sturdy even fiber for fine yarn makes more exacting requirements. In its growing period it demands its moisture in the gentle form of heavy dews and abundant fogs

rather than days of steady rain. As it ripens it wants warm, dry days. The time flax fiber is harvested is very important. If the plant is pulled from the ground too early, the fiber will be too fine and weak; if too late it will be brittle and of little use except for upholstery tow. Only the stem of the plant from the ground to the first branches has useful fiber for the making of yarns.

Regions around the Great Lakes, Puget Sound, Wash., and the Willamette Valley, Oreg., offer ideal conditions for the growing of flax for fiber. The amount of flax grown in these districts depends on the presence of a scutching mill nearby. A farmer seldom considers raising flax for its fiber unless he has a contract with a mill which promises to buy his crop.

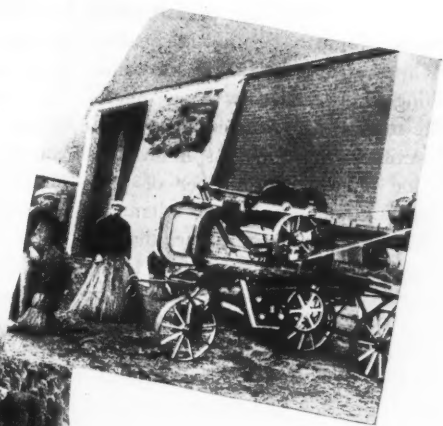
At one time Michigan farmers, because of the presence of 18 scutching mills in the State and in western Ontario, raised a great deal of flax for fiber. Today most of these mills have closed down.

Most flourishing flax-fiber center in the United States at present is in Oregon and one county in Washington State. There both the AAA and the WPA are lending a hand to help build up domestic fiber-flax production. AAA's help to farmers takes



HOW THEY DO IT IN BELGIUM

Much of the flax used for spinning our beautiful linen fabrics comes from abroad where workers are highly skilled in its culture. Pulling is still done by hand (above), though machines are crowding out this primitive method. Great care must be taken in removing the seed (right) so that the straw is not injured. Below (top) after threshing, the straw is retted or rotted by soaking in water, then "wigwamed" in the fields to dry. (Bottom row.) Breaking and scutching, partly by hand, partly by machine, finally separate fiber from straw; after grading, the fiber is ready for the spinning mill.



the form of a subsidy. With funds made available to the Secretary of Agriculture from tariff receipts, under section 32 of the Agricultural Adjustment Act, a bonus of about \$5 a ton was paid last year to pioneers in fiber-flax raising. This year the bonus will run around \$7.50 for each of some 5,000 tons.

Encouraging farmers to grow flax for fiber purposes would be an idle gesture if there were not adequate facilities for preparing the fiber for spinning. To insure these, AAA inspects and approves scutching plants where this process is done. Seven such plants in Oregon have been approved; five of them are cooperatively owned by the farmers themselves. Three of these have been established with WPA help. Now Oregon and Washington farmers, operating their own scutching mills, will be able to sell their own fiber to commercial flax-spinning mills.

"Human skill" is a phrase which must constantly be used in speaking of the culture of flax. Clumsy handling of the flax straw in any one of the many stages it goes through before it is ready for the spinning machine may result in fiber of poor spinning quality. Heaviest demands on human hands come after the flax is pulled out of the ground. If the fiber is of the quality that may be used for fine yarns it is threshed. If it is of poorer quality and is to be used for upholstery tow, the threshing process is omitted and done later by the machine making the tow. Long flax fibers are used in spinning "line" yarns for the best linens; "tow" yarns, used in coarser weaves, are made from the short fibers. Great care must be taken in the threshing process so that the straw is not broken and yet all the seeds are removed. After threshing, the straw is retted—or rotted. Either it is spread on the ground and exposed to the weather for from 1 to 3 weeks

or it is placed in huge water tanks until the gums in the plant which bind the fibers to the wood dissolve and the tiny tissues surrounding the fiber disintegrate. Breaking and scutching are the last two stages to which flax straw is submitted before the fiber is finally released from the straw.

From the scutching mill the flax fiber is ready to be taken to the flax-spinning mill. There are about 17 flax-spinning mills in the United States. Three of them, located on the Pacific Coast, use almost all the fiber that is produced in Oregon.

Flax fiber is hackled or cleaned when it reaches the spinning mill. The last slivers of shives are removed from the fiber, and the fiber is combed free of tangles, and then passed through drawing frames to be straightened and combed some more. Then at last it is ready for the spinning machine which twists it into yarn for cloth or thread. The finest yarns are wet-spun—passing through hot water before they are twisted. The sturdiness of linen yarns makes them the base for the most delicate laces and for materials to be given hard wear, such as the covering for airplane wings and fire hose. Today machines guarded by watchful eyes do most of our spinning for us. But yarns for the finest laces and for deluxe linens are still spun by hand. American machine-spun yarns are used mostly in the making of towel-ing, twines, and thread.

The spinning of fine linen yarns and the weaving of fine linen is still a technique dependent on skilled hands rather than the mechanical perfection of the machine. In certain sections of Ireland, Scotland, northern France, and Belgium, men and women have been working with flax for years. Their deft fingers "have a way" with yarns unexcelled by machines. It is from these countries that we import our finest linens.

The art of turning flax fiber into cloth has been practiced for at least 8,000 years, but it was not until the power loom and the flying shuttle began to be commonly used in the cotton industry that machinery for manufacturing linen was invented. Machines for spinning and weaving linen are similar to those for cotton, but they cost about four times as much. Flax fiber is not as flexible as cotton and is inclined to break, thus necessitating expensive additions to stop the machine automatically every time a thread is broken. The inelasticity of flax fiber makes it more difficult to weave into cloth than cotton and also to weave into cloth of various patterns. The principal linen weaves are the plain weave used for clothing and embroidery linens, twill weave for heavy fabrics, and satin weave for damask table linen.

When linen is finally loomed it goes through at least three finishing processes—bleaching, beetling, and calendering. Today most linens are bleached by chemicals, though the best quality linens are still grass-bleached. In the beetling process the dampened cloth is passed between wooden rollers and beaten with hammers until the threads have a uniform thickness and luster. The calendering process presses the cloth, giving it a smooth surface and extra glaze.

A fine linen thread runs through the history of mankind. Egyptian nobles wore skirts of sheerest linen, the Greeks and Romans valued linen as a rare and costly material. Today fine linen is still an aristocrat among fabrics, haughtily lending its name to many commodities made of cotton. Most of the sheets, many of the towels, napkins, and tablecloths which we call household linens are made of pure cotton or of union yarns which are a combination of cotton and linen.



TIPS TO CONSUMERS

Two tests for identifying an all-linen from an all-cotton fabric:

(1) A drop of glycerine on linen will leave a translucent spot; on cotton, an opaque stain; (2) When cotton threads are lighted they blaze up quickly and burn readily; linen smolders slowly away. Hold a linen fabric against a strong light (3) to see that "filling" and "warp" threads are well balanced, if you want a strong fabric. First signs of wear are usually in places that have been creased; avoid ironing folds in your linen cloths.

Though linen combines satisfactorily with cotton for many purposes, linen has qualities peculiar to it alone. It is because of these qualities that it has held its own against its cotton competitor. Though linen wrinkles easily, it is a favorite hot-weather material for clothing. It is known as a cool fabric because it absorbs moisture readily and water evaporates from it quickly. Linen is considered a material *par excellence* for tablecloths and towels. It does not lint as cotton does. It does not soil as quickly. It is more absorbent. Linen stands up well under constant use. Careful laundering increases its brilliancy and glossy, leathery texture. First signs of wear are usually in places that have been creased. In

ironing, linen should not be creased in the same place each time.

Today, because so many cottons are chemically treated to look like linen, it is sometimes difficult to tell whether a material is pure linen until it has been laundered several times. Such a test is of little help to the consumer when she is buying a tablecloth. Because water goes through linen rapidly and is slow to penetrate cotton, a wet fingertip was used by shoppers of old to test their linen. Today this test is not very reliable. Some cottons are so treated that they absorb water as quickly as linen. The oil test is still fairly accurate if the fabric is all linen and is being compared with an all-cotton material. A drop of glycerine on

linen will leave a translucent spot; on cotton the stain will be opaque. Knowledge of the difference between a cotton thread and a linen one is perhaps the best way to distinguish between the two materials. Linen threads are tenacious. If broken, they stay somewhat erect and the fibers cling together. A cotton thread goes limp and its ends spread out in all directions. When cotton threads are lighted they blaze up quickly and burn readily. Linen smolders slowly away.

Durability and serviceability of linen varies with the quality of the material. Federal specifications for table linen, used as the guide when the Government buys linen, are based on the kind of fiber used, the percentage of dressing, amount of bleaching, the weave, size of hem, the minimum thread count, weight, and tensile strength of the fabric.

A heavy linen gives the best service. Weight of linen, however, should be due to weight of the flax fiber and not to dressing. Bleaching weakens linen. Though a snowy-white tablecloth which has been full-bleached is elegant, for hard wear hotels and institutions prefer half-bleached or three-quarter-bleached cloths. Laundering carries forward the bleaching process.

Firmness of weave is an indication of durability of linen damask. Damask of top quality has as many as 450 threads per square inch. Hotels which give their linens hard wear usually buy damask with a thread count from 160 to 270. Balance of weave is also important. Filling threads usually wear out before warp threads. A damask may have a good thread count, but if the weave is unbalanced it will not be so desirable. As information of this type is not given on retail labels, the consumer must still depend on her own eyes. By holding linen against a strong

[Concluded on page 19]

COUNTING CALORIES

Weigh in age, size, and muscular activity when you count up the calories your diet should provide

POWER to flick an eyelash, to play three sets of tennis, to push a pen, comes from the food we eat. Take a mouthful, and the digestive process begins and continues until the morsel, broken down into various substances, is transformed into energy to work, to play, and even to sleep.

Carbohydrates (sugars and starches), fats, and proteins are known as fuel foods. As they are oxidized or burned in our bodies, they give off heat and energy which enable our bodies to function. They are as essential to us as gasoline is to an automobile.

Most foods are a mixture of one or more of these energy-yielding substances; of cellulose, or plant fiber, a form of carbohydrate which has little or no fuel value; and of minerals, water, and vitamins. The latter four are essential to us as body regulators and body builders but not as sources of energy.*

Watery fruits and green and leafy vegetables which we must have in our diets for their mineral and vitamin content as a rule are the lowest in fuel values. There are only 103 calories in a pound of tomatoes and 285 in a pound of apples, while a pound of sugar has 1,814 calories, and a pound of butter, 3,488.

Consumers do not buy their foods by calories, but a mother when thinking in terms of preparing a "filling" or "substantial" meal for her family soon learns from experience

that the carbohydrates and proteins in the meal have the greatest "staying qualities", though she may not think of them as fuel foods or in terms of calories.

The calorie is a unit of measurement nutritionists use for determining the amount of energy in various foods. It is simply a standard for measuring heat, just as the inch is a measure for length and the pint for volume. Technically, one large calorie is equal to the amount of heat it takes to raise 1 kilogram of water 1 degree centigrade. As the chemical processes are similar when food is burned either inside or outside of our bodies, nutritionists have been able to gage just how much energy is released by the burning process. For this purpose they use a special machine called the calorimeter which records the exact amount of heat released by the oxidation of any type of food.

Armed with these definite data on how much fuel value different foods contain, nutritionists have gone one step further and studied the problem of how much fuel we burn doing different types of work. For these tests they use a respiration calorimeter which is large enough for a human being to live in during a testing period. Thanks to these two devices, today we have exact calculations based on hundreds of experiments which tell us the average number of calories a child and an adult need a day, depending on the type of life each one leads. These are supplemented by exact information on the energy yield of various foods.

Fat is the most concentrated of

all energy foods. A man with a sedentary occupation who requires only 1,800 calories of fuel a day could get this whole amount by eating a little over a half of a pound of butter. But he would quickly regret it. Fat is the hardest of all foods to digest. It leaves the stomach more slowly than other foods and tends to retard digestion of other foods. For this reason, too, a great percentage of fried foods in the daily diet, especially in that of children, should be avoided. As a general rule, the amount of fat we eat should depend on the type of work we do. Farmers who do strenuous work can use more fat in their diet than a man who sits at a desk all day. The fat not immediately burned as fuel is stored in our bodies for an emergency. The length of time a man can go without food depends to a great extent on the amount of fat he has tucked away. This reserve fat also serves us in other ways. It acts as a protective pad for many of our organs and also as an insulator—protecting us from too great a loss of our body heat. Our chief sources of fat are butter and cream, other animal fats, and fats from nuts and seeds such as peanuts and cottonseed.

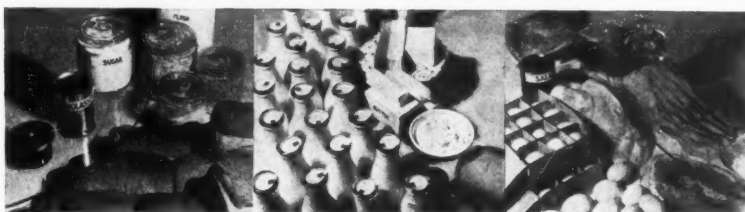
Sugar, as a form of concentrated energy, comes next to fat. In the form of glucose it is always present in our blood. When our blood has the required amount, sugar is stored in the liver in the form of glycogen. When this storehouse is full and we still eat sugar, our bodies transform it into fat and store it away. Besides getting sugar from the juice of the beet and from sugarcane, we get it in sweet fruits and vegetables, such as grapes, oranges, corn, peas. Sugar is more easily digested than any other food and is a quick source of energy. For this reason, hikers will carry with them a chocolate bar or raisins, high in sugar content, to tide them over until they have a meal. As a rule, though, the proper time

*For the importance of vitamins in the diet, refer to CONSUMERS' GUIDE, vol. III, nos. 8, 10, 11, 12, and 14; for minerals, vol. III, nos. 19, 20, and vol. IV, no. 9; for water, vol. IV, no. 8.

to eat sugar is at the end of a meal, for, though it is a quick-burning fuel, it blunts the appetite for other foods we need. If eaten in excess, it will irritate the lining of the stomach.

Starch is the fuel food standby for most people. Because most starchy foods are cheap foods, the poor of the world rely on them as their chief source of energy. The nutrition problem for people with too low incomes is often one of a diet with too much starch and too little of the foods with vitamin and mineral content. We digest starch more slowly than we do sugar but faster than we do fat. Like fat, starch has a satisfactory staying quality. Many nutritionists say that one-third of our daily calorie portion should be in starchy foods. In the digestive process starch is first turned to sugar and then turned to fat.

"Holding first place" is the literal translation for the Greek word *protios* from which we derive our word protein. This important substance which we find in milk, fish, eggs, cereals, nuts, peas, and beans serves us in two ways. Like carbohydrates and fats it can be burned as fuel—but because of the nitrogen it contains it is not as economical a body fuel as starch, sugar, and fats. Before a protein can be used as fuel, it must be freed of its nitrogen. In a sense the nitrogen content of protein makes it a liability when we depend too heavily on it for our fuel supply. It is best not to laden a menu with calories derived from protein but for the majority of our fuel supply to depend on the carbohydrate foods. However, this very nitrogen which is of no use to us as a source of energy is invaluable in building our bodies. It is only through the protein foods that we get nitrogen which is essential to every living cell. (For the importance of protein as a body builder see CONSUMERS' GUIDE, vol. III, no. 16.)



YOUR PENNY'S WORTH IN CALORIES

A penny spent for each of these foods will buy the number of calories shown below. But remember: Meals made up *only* of bargains in calories may be easy on the pocketbook but hard on health. Many low-fuel-value foods, high in other nutrients essential to building and maintaining sound bodies, should have a part in any well-balanced diet.*

1c worth	Calories	1c worth	Calories
CEREAL PRODUCTS		DAIRY PRODUCTS AND EGGS	
Flour, wheat	321	Butter	87
Corn meal	289	Cheese	67
Hominy grits	247	Eggs	18
Rolled oats	240		
Rice	187	FRUITS AND VEGETABLES	
Cereal, wheat	117	Navy beans, dried . . .	145
Corn flakes	107	Prunes, dried	109
Macaroni	105	Potatoes	108
		Sweetpotatoes	80
BAKED GOODS		Bananas	47
White bread	131	Corn, canned	42
Rye bread	123	Apples	31
Whole-wheat bread . . .	116	Cabbage	21
Soda crackers	102		
		SWEETS	
MEAT PRODUCTS		Sugar	324
Lard	238	Strawberry preserves .	45
Salt pork	139		
Bacon strip	81	OTHER FOODS	
Picnic pork	53	Peanut butter	136
Pork, loin roast	40	Chocolate	81
Leg of lamb	27	Pink salmon	67
Beef, round steak . . .	16		
Veal cutlets	12		

*Estimates based on average United States food prices for June 15, 1937.



CHERRY RIPE

EARLY in July the President of the United States received a present of a pie. It was a huge pie, plump with juicy cherries, and was brought by airplane as an edible invitation to a cherry festival about to be held in the heart of the largest sour cherry producing section in the world—the Grand Traverse Region of Michigan. With this start, the jubilee got away to its exhibitions, contests, miles of parades.

As far as production goes, cherry growers have reason to stage a celebration this year. Production barometers indicate fair weather, with the 1937 crop of sweet and sour cherries in the 12 commercially important States topping the previous 1932 record. Estimates set the crop at about 144,600 tons as compared with 115,000 in 1936 and an average of 116,700 during the 5 years from 1928 to 1932. A fine sour-cherry harvest takes the credit for these gains, since the sweet-cherry varie-

Cherry pie prospects are good if consumers keep up with the record crop forecasters predict for this year

ties suffered heavy losses from rains during their pollination period.

Real reason for rejoicing comes when cherry growers receive high prices for a large crop. Production, after all, doesn't mean money in the bank for farmers if there is no demand for the thing produced. Last year consumers wanted cherries and were willing and able to pay well for them. Farmers, therefore, received the good price of \$76.73 per ton; farm value cleared the \$8,000,000 mark. We don't know yet whether or not cherry growers will have tough sledding this year in disposing of the larger crop.

Cherries have never seriously com-

peted with the apple and orange for a first place in commercial importance. First place in sprightly flavor they yield to no other cultivated fruit. Cherries are valuable, too, as sources of vitamins A and C. Neglect the latter vitamin and you increase your chances of having poor teeth and high dentist bills.

Two species, natives of Europe and southwestern Asia, give us almost all our cherries—the sour, sweet, and Duke varieties. *Prunus cerasus* is ancestor of our light and dark sour cherries. From *Prunus avium* developed our sweets. Duke cherries are probably hybrids, standing halfway between the sweet and sour groups. Other cherry species are grown, though not for their fruit. The Mahaleb provides hardy stock upon which to bud cultivated varieties. To the bird cherry we owe thanks for the pleasant reddish wood of our early American tables and corner cupboards. Several Japanese

species are cultivated as ornaments. The riotous blossoms of these Kwan-zan and Yoshino trees are responsible for drawing crowds of tourists to our National Capital in the springtime.

Though thousands like to feast their eyes upon a foaming sea of white and pink cherry blossoms, many more thousands prefer to feast directly upon cherry fruit. Hence the popularity of our Richmond, Bing, Lambert, Royal Ann, and Montmorency varieties. Growers' lists have been blue-penciled until they include only a few standard cherry varieties. Consequently cherry growers can plant an orchard with some assurance that the harvest will meet market demands. Consumers profit by this practice, since they are then pretty sure of getting cherries of uniform taste and size.

Among sour cherries, the Richmond deserves attention because of its early ripening and its hardness. Except for these claims to fame, the Richmond would long ago have been cut out of the running by the Montmorency—a medium-sized red cherry in great demand with canners.

All sour-cherry varieties are used primarily for pies, sauces, and preserves. For luscious cherries to be eaten fresh, consumers look to the sweet cherry. Sweet cherries fall into two classes—the Hearts and the Bigarreus. Hearts have tender flesh and a characteristic heart shape. Bigarreus, with their spheres of firm flesh, pack better than the Hearts, though they can't hold a candle to Hearts where flavor is concerned.

Black Tartarian is a heart cherry widely grown for home consumption because it thrives under a wider range of soil and climatic conditions than most other sweet cherries. The fruit is rather small and dark-purplish black.

On the basis of quantity of fruit produced, Windsor steps up for a

word of praise. This Bigarreau-type black cherry is the best selling mid-season variety grown in the East. The fruit is very dark red, turning black upon maturity. While not as fine in dessert quality as the Black Tartarian, it is a popular market sort and ships well.

Napoleon, or Royal Ann as it is known west of the Rockies, is the one white-fleshed sweet cherry of commercial importance. No mid-season variety seems able to fill its place in spite of its handicap in producing fruit that is inclined to crack before reaching maturity. Consumers who sit down to a dessert of canned cherries at the table more than likely will be eating these big, yellowish cherries, blushed with varying shades of red. For the Royal Ann is the one sweet cherry that comes into its own as a canned product or processed maraschino cherry. Although the flesh is firm enough to warrant shipping as a fresh fruit, the Royal Ann stays right at home because consumers prefer the large, glowing, dark varieties.

The Duke varieties—the May Duke, Late Duke, etc.—find a ready sale at local markets, but they don't ship long distances well.

Consumers who find fresh cherries at market do well to remember that quality comes when cherries reach their full maturity on the tree. Unlike many other fruits, the cherry stops developing as far as color and flavor are concerned as soon as it is picked. To tell whether a cherry is tree-ripe, look for a bright, fresh appearance, clear color, and plumpness. Best quality cherries are juicy and have a well-developed flavor. Whatever their actual price, reject as costly immature cherries that are hard or shriveled. Don't put stale fruits in your market basket, either, since these will be soft and shriveled.

Examine cherries closely for worm injury and decay. The latter often

takes the form of small, brown, circular spots on the fruit. A stained and leaky box often shows that decay has softened the fruit. If cherries have been bruised or mechanically injured, molds develop readily at the point of injury. That is why cherries that are to be eaten fresh should be bought with their stems on.

As in the case of other fruits, the United States Department of Agriculture has set quality standards for fresh and canned cherries. Grades for the fresh fruit benefit the consumer only indirectly since no mark appears on the fruit. Grades for canned cherries frequently appear on the can label, and thus prove of considerable help. Canned red sour pitted cherries which are large, plump, and of fine color are classified as U. S. Grade A (Fancy); other grades are U. S. Grade C (Standard) and Substandard. Canned sweet cherries, both pitted and unpitted, run through a wide range of grades—U. S. Grade A (Fancy), Grade B (Choice), Grade C (Standard,) and the below-standard grades, D, E, and F, the latter known as "pie pack" cherries.

Canned sweet cherries are sometimes packed without sugar for hospital use. These may belong to the A, B, C, or D grades, but will bear on the container the additional statement "Unsweetened Cherries in Water" or "Water Pack Cherries."

Box the compass to find where cherry trees grow in the United States. More than 11,300,000 trees of bearing age dot the map, with every State contributing its quota. Michigan is champion cherry-growing State with more than 2,250,000 trees—double the number credited to its nearest competitor, New York. California boasts of at least one million trees, while various States grow about half that number. Florida trails the field with its 175 cherry trees. This is natural since cherry

trees languish where summers are long and hot and winters too mild to induce the complete dormancy necessary for the required rest period. For that reason, rule out the South as cherry-growing country. Figures are somewhat deceptive when it comes to cherry trees, since they are based on commercial cherry growing; in some States trees are grown in small orchards and the fruit finds its way to local markets only.

Trace a line down the Rocky Mountains and roughly you divide the country into the sweet cherry producing region to the west and the sour cherry to the east. New York, Michigan, Pennsylvania, Ohio, Colorado, Wisconsin, and Iowa are famous for their "pie" cherries. Some sweet cherries invade this territory, but generally the sweet cherries stay in the warmer, lighter soil and the more favorable climatic conditions of California, Oregon, and Washington.

Most of our cherry crop goes to the cannery, with sour cherries far and away in the majority. Bakeries offer a huge outlet for canned sour cherries for pie making. Like as not even in cherry season cherry pie on the menu will be made of the canned product. Almost all sour cherries are pitted and canned in water with no sugar. Preference is growing, however, for cherries prepared in another way—pitted and packed in barrels which are then stored at a temperature of 10 to 15 degrees Fahrenheit. Bakers like these frozen cherries for their popular cherry pies. Sweet cherries when canned are put up in sirup with their pits.

Redder than any artificial cherry on a woman's hat, is the imitation maraschino cherry used in icings, ice cream, and as garnishing. Maraschinos are manufactured almost exclusively from the sweet Royal Ann. Until the Tariff Act of 1930 began to shut out importations of cherries

with its high duties, American manufacturers counted on Italy to supply most of the brined and sulphured cherries suitable for making imitation maraschino and glacéed cherry products. Since 1930 they have found their cherries at home, and yearly call for more than 5,000,000 pounds of cherries for this thriving business.

Process of manufacturing our imitation maraschino cherries consists in placing the cherries in brine and bleaching them with sulphurous acid or sulphur dioxide fumes. Stemming and pitting come next. After a thorough washing, the cherries are put in sirups of increasing density. A brilliant artificial red dye is then applied, the product artificially flavored and packed in sirups. For the glacé or candied cherries often found in fruit cake, cherries are saturated with sugar, then allowed to drain.

Consumers who ask for maraschino cherries at the grocer's will get

just what they expect—the brilliant red globules that soda clerks balance inevitably on the top of a nut sundae. Consumers won't be getting true maraschino cherries, however, for that term applies only to marasca cherries preserved in a liqueur prepared from the same fruit. And the marasca cherry grows only in the Yugoslavian province of Dalmatia.

Labels upon our so-called maraschinos, bear some such phrase as "Imitation Maraschino Cherries." The Food and Drug Administration of the United States Department of Agriculture protected consumers against misrepresentation by a decision that only the true marasca cherry could bear the label "Maraschino Cherries." Royal Ann cherries flavored with maraschino alone may be called "Maraschino-flavored Cherries"; if packed in maraschino liqueur they may be branded "Cherries in Maraschino." Products flavored in imitation of maraschino must bear the word "Imitation."

With a tree as with a human being, the care given in the first years of life is crucial. Proper pruning has much to do with tree futures. Pruning to an open center allows air and sunshine to reach the branches of these sour-cherry trees, means that fruit will ripen evenly.



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More news from the consumer-farmer cooperative front in four States

OHIO.—Up to a new high goes the volume of Farm Bureau cooperative activities in Ohio. First 4 months of 1937, according to Farm Bureau records, indicate new records in the distribution of farm and home supplies. Automobile insurance coverages showed an increase of 47 percent over last year, fire insurance climbed to 85 percent over last year. Cooperative purchasing volume increased for every article handled, and cooperative marketing jumped encouragingly. Potatoes particularly are on the march; 450 thousand bushels of potatoes were marketed cooperatively this year. Cooperative potato marketing began in Ohio back in 1934, when huge surpluses clogged up all commercial channels. Now, no stopgap, cooperative potatoes get premium prices on most markets. . . . Ohio will be dotted with cooperative conferences and institutes this summer. The Educational Division of the Farm Bureau Cooperative Association announces that it will sponsor 15 camps this summer. Six are for youths, three for farm women, three for co-op managers, and three for office employees and publicity directors.

Not a cooperative commonwealth but almost a cooperative county, Clermont County, Ohio, now has 2,500 farm cooperators out of a possible 3,600 farms. To supply co-operators' needs the Clermont Farm Bureau Cooperative Association now has four large warehouses, a coal

yard, a building materials yard, and a monthly newspaper. . . . Butler County cooperators were late in coming into the cooperative movement. However, its cooperative, organized November 1936, has enrolled 685 members in less than 9 months. Business in the cooperative store soared from \$337 in February to \$8,300 in April, with receipts still going up and three trucks working overtime. . . . Rural electrification projects now under construction in Ohio will string wire 3,819 miles, supplying electricity to 13,495 farms in 25 counties.

PENNSYLVANIA.—Cooperative activities in Pennsylvania have been pressing ahead at a pace to cause the editors of the *Co-op Review* (official organ of the Pennsylvania Farm Bureau Federation) to reflect: "How many things are looked upon as quite impossible until they have been actually effected?" A million dollar cooperative in Pennsylvania seemed to be quite impossible 30 months ago, they say, but this year they think they are on the road to one. Sales of feed by the Farm Bureau to May 1, 1937, were 193 percent over last year; fertilizer, 52 percent; spray materials, 248 percent; spray materials, wet, 69 percent; kerosene, 43 percent; and gasoline, 40 percent. Total sales to May 1 were \$139,000—122 percent over last year.

Are consumers going to see the familiar chain store transformed into

consumer cooperatives? Right on the heels of the closing of 200 chain stores in Pennsylvania, following the passage of a chain-store tax, comes a proposal that these closed chain stores be converted into consumer cooperatives. Proposed by the Consumer Distribution Corporation, which will be the wholesale agency for a still nonexistent group of cooperative department stores, is a plan by which the closed stores would be sold to neighborhood consumers. The chain-store system would then act as the wholesale agency for the stores.

TEXAS.—Cooperators went down to meet the train at Hereford, Tex., to welcome the arrival of five new "Co-op" tractors, a full carload. These five "Co-op" tractors, built on specification of cooperatives, went to the Hereford Consumers Fuel Association.

WISCONSIN.—Insurance needs of Wisconsin's cooperative associations have led them to establish an Insurance Cooperative Agency. Member organizations put up \$10 of a \$25 membership fee in cash, pay the rest in patronage dividends. Not a mutual insurance company, the cooperative agency acts only as a broker for its members. By reducing premium and renewal costs, and by giving expert advice on insurance, it hopes to give member cooperatives better protection at lower costs. Wisconsin's housing and Rural Electric Cooperatives initiated the plan. Launched, the agency now includes 3 other cooperatives, has issued invitations to 75 others to join.

Madison, Wis., cooperators are going to apply Rochdale principles to Hollywood. The "New Theatre" there, a cooperative venture, intends to present daily motion pictures 3 weeks out of the month, legitimate drama in the fourth week. Tenta-

tive organization plans call for a \$10 share subscription from each member with a limit of 10 shares to a member.

Sober stock taking is all too rare in some cooperatives, but Madison, Wis., cooperators know when to retrench as well as when to expand. Selling coal, coke, and wood from their own yards last year turned out to be uneconomic. Competition was keen and margins did not permit the employment of a fuel expert. This year they are beginning again with a contract to buy coal for members through an established coal firm. To insure efficient utilization of fuel by members, the cooperative now offers the services of a heating engineer. Other losses were incurred last year when the cooperative tried to keep three gasoline stations going. Overhauling has resulted in the sale of two stations, and the determination to keep one going profitably.

MILK FOR MILLIONS

[Continued from page 7]

small towns and on the far outskirts of large cities, is one in which the farmer sells the milk produced on his farm directly to other consumers. The third, the most important for most consumers, is the one which finds its final expression in the bottle of milk and the bottle of cream on city doorsteps in the morning.

Most farmers do their milking by hand, taking from 6 to 8 minutes for each cow. On a few farms, however, milking machines are used which mechanically perform the pulsating motions of the hands. Four rubber-lined cups are placed over the four teats of the cow and the machine draws the milk through a tube into a container. Cows are milked at least twice a day, usually night

and morning, and yield from 4 to 6 quarts at each milking.

Milk is drawn directly from the cow into pails, then usually strained into large cans with capacities of from 10 to 40 quarts. Under good conditions these cans are taken to the milkhouse which is some distance from the dairy barn to avoid the danger of infection from dirt and dust. There, if the farmer is a careful one, the milk is cooled, sometimes by immersion in ice-cold water, sometimes by refrigerating systems, and sometimes simply by running water. At a regular time during the day the cans of milk leave the farm. Deterioration starts doing its damage when careless farmers let milk cans stand unprotected from the heat while awaiting collection.

Getting the milk from the farm to the city is the farmer's responsibility. Whatever the cost it comes out of his pay check. This is true when the milk is shipped directly into the city, as is about 50 percent of the milk going into St. Louis and all of the milk going into the cities of Connecticut, or when it is first delivered to a country milk station and then shipped to the city, as is the case half the time in St. Louis and most of the time in Philadelphia and New York.

Transportation of milk, like the entire business of milk, has become a complicated, specialized business by itself with its own points of friction, its own technical problems, and its own special achievements. Milk is picked up from a roadside platform in front of the farm. From there it is hauled directly into the city pasteurizing plants or to a country receiving station. It may go by truck or train, part or all of the way. Trucking may be by the farmer himself, by his cooperative, by a farmer who serves all the farmers in his neighborhood, by an independent trucking company, or by a subsidiary of the milk distributor.

Today all forms of milk transportation give the front seat to the motor truck. Buffalo, Cleveland, St. Louis, St. Paul-Minneapolis, Columbus, Dayton, Kansas City, Louisville, Richmond, and San Diego receive all their milk by motor truck; many other cities receive almost all their milk by truck. Only two important cities still depend chiefly on trains: Boston, which receives 90 percent of its milk by train, and New York, which receives 63 percent by train. Some time in the future, some experts predict, trucks may give way to trains again as the chief vehicle for milk transport as more milk ordinances become standardized and milksheds are widened to include milk from any protected area. It is possible to deliver fresh milk by refrigerator cars from farms 1,000 miles away from a city.

Often hauling charges are a fruitful source of friction between farmer and distributor. Unfortunately rates do not always follow established rate-making principles. A study of milk in Milwaukee shows that the average cost for hauling 100 pounds of milk was 18.6 cents in September 1934, 23 cents in 1930. This study did not indicate the basis for the determination of rates, but a study by the University of Illinois of the St. Louis milkshed states that hauling rates there seem to have no relation to distance, to the state of the roads, or to any one of the other factors that might reasonably be expected to determine rates. Hauling charges per hundredweight for 12 miles on 15 different routes varied from 13 to 30 cents for no apparent reason. Farmers naturally resent the apparent inequity of the charges made against them for hauling milk.

Federal Trade Commission experts during a study of milk in 1935 and 1936 authorized by Congress discovered instances of dealers taking a profit on services performed for

producers. In Baltimore, Cincinnati, Boston, and Philadelphia hauling charges levied on farmers by distributors exceeded the cost of hauling. Distributors' profits at the expense of farmers on this operation ranged up to one-fourth of a cent a quart in these cities. In Philadelphia distributors charged farmers for hauling some milk which was not hauled at all. In Boston and Baltimore the amounts charged to farmers for putting milk through the dealers' country stations exceeded the cost of the operation. These practices, the Commission said, are unfair and should be discontinued.

Milwaukee's Common Council with the cooperation of the CWA, the FERA, and AAA experts studied almost every aspect of the milk problem of Milwaukee from 1934 to 1936. Two objectives of the study were, first, to examine the leakages and inefficiencies of a competitive milk economy; and, second, to consider the establishment of a public milk department for the distribution of all milk in Milwaukee.

Counting up all the factors in the hauling situation, the Milwaukee investigation discovered that 143 haulers in the Milwaukee milkshed stopped at 2,597 farms to collect milk. Wastes showed up startlingly. To get to the 2,597 farms they served it was necessary for these 143 haulers to pass 2,852 dairy farms. Hauling in this case, and Milwaukee is not exceptional, becomes something like playing leapfrog, with a hauler collecting from one farm then skipping a farm, while right behind him another hauler follows, collecting from the farms that have been skipped, skipping the farms that have been served. One trucker passed up 55 farms to make collections at 9 farms. Trucks devoted to milk hauling were used only to 60 percent of their capacity.

People who don't keep their ap-

pointments on time are a nuisance, but when trucks and drivers must stand around and wait for attention at a milk plant, not only is it a nuisance, it is a waste of money and resources. To haul their milk daily into Milwaukee truckers had to spend a total of 937.2 working hours. Of this time they had to stand around and wait 195 hours. For every 5 hours the haulers worked, they had to loaf more than 1 hour.

[Continued in our next issue]

LINEN CONSUMERS ARE LUCKY

[Concluded from page 11]

light one can get some idea of firmness and balance of the weave.

Damask linen is called single or

double depending on the technique used in weaving the design. The design is made by carrying the warp thread over several filling threads. In single damask the warp thread floats over four filling threads and binds the fifth thread, while in double damask the warp floats over seven filling threads and binds the eighth. Because more yarns are generally used in the filling in double damask, it is usually considered to give the best wear. Here again firmness of the entire weave is important. Double damask designs used to be reserved for fabrics of the finest weave, but today there is a tendency to use them on loosely woven materials. When the double technique is used on a loose weave, the floating threads tend to catch and break.

STUDY QUESTIONS FOR THIS ISSUE

1. Where does the milk you buy come from, geographically speaking?
2. Does your local milk ordinance limit the area from which milk sold in your community may come?
3. What is "surplus" milk? What proportion of the milk produced in this country is classed as "surplus"? Why does "surplus" milk present problems?
4. What was the purpose of the earliest types of milk regulations?
5. What was the original purpose in passing our present type of milk ordinance?
6. What kinds of safeguards should be taken to see that milk is kept free of contamination?
7. In what way can milk ordinances and their enforcement go beyond their original purpose?
8. Does the Federal Trade Commission recommend any changes in the present local control of milk supplies?
9. What are the advantages to be gained from standardizing milk ordinances throughout the country?
10. Who pays the cost of hauling milk from the farm to the processor?
11. What kinds of difficulties have farmers had over this cost?
12. What is one way by which this cost might be reduced?
13. What are some reasons why we import much of our flax fiber and linens?
14. What is AAA doing to help American farmers to produce flax?
15. Why are calories not an adequate measure of food values?
16. What are the crop prospects for cherries this year?

In This Issue

	<i>Page</i>
Consumers' Alphabet	2
Milk for Millions	3
Linen Consumers Are Lucky	8
Counting Calories	12
Cherry Ripe	14
Cooperation	17
Study Questions	19



CONSUMER TIME ON THE AIR

via the National Broadcasting Co. red network has been changed to 1:30 p. m. eastern standard time (not daylight saving) every Wednesday. Tune in on your Consumers' Counsel and a representative of the General Federation of Women's Clubs. They talk about what's happening to food supplies and prices; how you can get your money's worth in foods and other agricultural products; what consumers are doing to make their dollars stretch farther. Find out from your local N. B. C. station the hour when this program is broadcast in your city. It will give you timely advice on pocketbook problems.

